Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

type of the genus. The beak is rather robust, its greatest width being contained about three times and a half in the length of the skull; thence it decreases gradually forwards, the lateral contour describing a sigmoid outline, while the surface above towards the end is moderately and quite regularly arched from side to side, no groove separating the intermaxillaries and supramaxillaries. The triangular or deltoid area, in front of the nostrils, is nearly plane but elevated, and its surface corrugated; it gradually ascends backwards to the posterior angles of the intermaxillaries, while forwards it is incurved, and continued as a narrow internal margin of the maxilliaries, almost to the anterior fourth of the beak; its greatest width is less than half the width of the cranium. The interspace between the intermaxillaries is wide, and scarcely contracted at the middle. The supraoccipital projects forwards, and its point almost or quite touches the nasals. The temporal fossæ project far backwards. The lower jaw is nearly uniformly high for the posterior fourth of its length, and at its symphisis is again enlarged and deeper.

The *teeth* are elongated, boldly curved, in the upper jaw about thirty-two in number; all are directed obliquely forwards and outwards; the distance between the last and the posterior notch of the supramaxillary equalling the width of the bone; in the lower jaw there are about thirty or thirty-one teeth on each side, directed somewhat outwards, and the posterior one also slightly backwards.

Three skulls of adults of this species, obtained at San Francisco, California, are in the Smithsonian collection. They indicate a species different from any that has yet been intelligibly described. I refer it to *Lagenorhynchus*, as contradistinguished from *Delphinus* by its flat palate, destitute of lateral grooves; the differences between skulls of this genus and *Cephalorhynchus* are not evident from the published accounts.

### PHOCAENA VOMERINA, Gill.

The skull is very similar to that of *P. communis*, and the proportions generally differ little or none, but it is at once distinguished by the development of the vomerine bone, which is more developed and recurrent backwards, expanding below into a more or less enlarged horizontal process behind the palatines. The teeth appear also to be more numerous; in the upper jaw, on each side, there are about thirty-nine or forty teeth, disposed in two divaricating series, in the front of which are about eighteen, and in the posterior eleven. In other respects no decided specific differences seem to exist.

This species is represented in the collection of the Smithsonian Institution by the much injured skull of an animal obtained by Dr. Kennerly at Puget's Sound, and by the skin and skull of a younger animal, procured at San Francisco by Dr. William Stimpson as naturalist of the North acific Exploring Expedition.

---

## Note on a Species of HUNCHBACK WHALE.

BY PROF. E. D. COPE.

The author has had an opportunity of studying the skeleton of a hunchbacked whale of our coast, preserved in the museum at Niagara Falls, in Canada. A label on the specimen explained that the animal was found dead at sea, forty miles from Petit Menan lighthouse, off the coast of Maine, and was towed to shore by a Capt. Taylor. It was carefully cleaned, and appeared to be perfect, except in the lack of the sternal, pelvic, and periotic elements. Its length, when fresh, was fifty feet.

It presents all the characters of the genus Megaptera, Gray, especially of the northern species, including the lack of coracoid process, and presence of a small coronoid process of the mandible. Its subordinate characters differ from those of the M. longimana and gigas, the known north Atlantic species, as figured and described by Rudolphi and Gray. The transverse process of the atlas is directed obliquely upward, truncate, deeper than long, measuring half the depth of the articular face, its upper origin above the latter, and at the base of the neural arch. A rounded process, bearing the posterior articular surface, projects into the upper part of the spinal canal. Of the transverse processes of the axis, the superior is longer; the canal is not depressed, a little over half the diameter of the centrum. The superior transverse processes increase in length to the fifth cervical, where they are straight and slightly descending; those of the sixth and seventh are well developed. The last is the only one without inferior process; the others are well developed; that of the fifth, three-fifths the diameter of the centrum, and slightly angulated near the middle. Total number of vertebræ, 48, all free; the neural spine is first smaller than the zygapophysis on the fortieth. The neural arches and spines are remarkably elevated on the dorsal and lumbar regions, somewhat as in the Catodontidæ: *e. g.*, in the 33d vertebræ, the vertical diameter of the centrum is 9.75 inches, and the height of the arch and spine, 17.87 inches, or nearly double; the position of the zygapophysis measures half the elevation. The caudal series is short, and though a few vertebræ have possibly been lost, the series appears as though complete; there are attachments for eight chevron bones. There are fourteen pairs of ribs, of which the anterior are simple-headed, and flattened distally; the first is especially dilated, double the width of the median, and presents a process on its posterior edge near the extremity. This is present on the two following, being successively nearer the extremity in each. Those of the last pair are slender, and longer than in Balæna, exceeding the second pair. The length of the humerus and remainder of the fore limb is 9.05 feet, equal the length of the cranium; they supported a fluke equal in life to one-fifth the total length. The breadth of the cranium measured below, from tip to tip of the orbital processes of the frontal, 6.41 feet, or to the length as 8 to 11; in Rudolphi s figure of the longimana, the proportions are as 8 to 14. Breadth between coronoids of mandible, 5.75 feet. The ulna is much curved, and with two proximal heads. Scapula, height, 29.6 inches; breadth, 44.4 inches.

This specimen differs from those described by Gray * and Rudolphi, † in the long inferior lateral processes of the posterior cervical vertebræ; in the former, they are said to exist on the anterior only. W. P. Flower, however, in a valuable paper‡ on cetacean skeletons, describes two specimens, one in the museum at Louvain, and the other at Brussels, which exhibit these processes as far as the sixth and fifth vertebræ, respectively, but of diminished length. In the specimen under consideration, that of the fifth is as long as that of the second.

The parallelopiped form and elevated position of the transverse processes, and the internal process of the atlas, are not represented in Dr. Gray's figures.

The cranium is broader, in proportion to its length, than represented by Rudolphi, and shorter in proportion to the total, than in the measurements of Flower and Moore: in these it is one-fourth, or more; in the Maine specimen, one-fifth, or less. The fins are, also, relatively shorter, measuring one-fifth of the length, instead of one-third.

A most striking peculiarity of the species is the great elevation of the arches and spinous processes of the dorsal, and especially the lumbar vertebræ, reminding one of the structure in the toothed whales. The outline of the skeleton is thus somewhat humped behind, presenting a contrast to that represented by Rudolphi in the type specimen of the longimana, where the elevation of the arches and spines does not exceed the diameter of the centrum, on the lumbar region at least: on the 33d vertebra, the zygapophysis measures one-third this height. The length of the diapophyses is considerable, and similar in both. Rudolphi represents eleven chevron bones, and the anterior ribs are not flattened, or furnished with an inner process in his figure.

---

* Proc. Zool. Soc. Lond., 1864, 208.

† Mem. Acad. Berlin, 1829, 133.

‡ Pr. Z. S. Lond., 1864, 416–18.

In the M. gigas, the spinal canal is relatively larger, and the cervical superior and inferior transverse processes of one side are more symmetrical and similar.

An American fin-backed whale has been named Megaptera americana, from a very brief and indefinite description in the Philosophical Transactions, I. p. 11. A species named on such a basis can never be recognized; but, if we must accept it, the only character given, the relative lengths of the body and fin, are entirely at variance with those of the present species: the length of the latter is said to be one-third of the total.

Supposing the reduced number of vertebræ and chevron bones to be the result of accident, and the form of the anterior ribs to have been unnoticed by Rudolphi, the shorter head and fins, the peculiarly high neural spines and peculiarities of some of the cervical vertebræ, would seem to distinguish this specifically from the longimana, if, as is most probable from the recent researches of Gray, such characters are invariable in the species of Cetaceans. On such premises this animal may be called Megaptera osphyia.

A species of this genus has left its remains in the miocene of Eastern Virginia, judging from periotic and other bones sent me by my friend Edw. Holway, of Yorktown. Probably it is one of the species described by Leidy, Proc. Acad., 1851, 308.

A pair of bullæ without their other periotic elements has been sent me from the Museum, Salem, Mass., by Frederick W. Putnam, Secretary of the Essex Institute. They were presented to the Museum by Capt. J. W. Clever, and are said to have belonged to a hunchbacked whale. Their locality is unknown.

The transverse section represents a cylinder. Taking the bulla of the left side, the incurved lip of the interior face (position derived from the figures of Balæna australis in Ossemens Fossiles) forming no angle with the inferior aspect: this lip rolls regularly inward without compression or fold; with its laminæ the smooth surface terminates, all the remaining surface of the bulla being closely rugose. Viewed from above, the anterior extremity is more contracted than the posterior, and the outer face presents three inflations, while the inner is medially straight. Of the supero-exterior inflations, the middle is prolonged into the usual superior process, which is much recurved, and constricts moderately the great fissure at two-fifths its length from its posterior extremity; it is separated by a deep fissure from the posterior inflation. The main fissure is in one plane, and is expanded into both lips anteriorly. The portion supporting the other periotic elements postero-interiorly stands on a strong pedicel. Greatest length, 4 in. 5 l.; breadth at middle inflations, 2 in. 8·4 l.

Huxley's figure of the periotic bones of Balæna australis (Elem. Compar. Anat. 273) represents the longer process as Cuvier, longer and not so acuminate as in our specimens of the B. cisarctica, but the shorter process as much shorter than in the former figure, and more as in our specimens.

A pair of earbones of one individual from the Museum Salem, differ considerably from those of three individuals of the B. cisarctica in the Academy collection of nearly the same size. In them an arched ridge descends from the upper elongate lip process, on its inner side, and, describing a curve, rises to the pedestal of the longer periotic process. In the cisarctica the ridge is inconspicuous, and includes but a groove between it and the labial border, while in the Salem specimen it is very strong, and, descending farther, includes a pocket with the lip border. In the latter there is a broad smooth rim on the rising outer lip margin of the other end; in the cisarctica none at all. Viewed from below, the end next the long processes is broader and more nearly truncate, owing to the strong development of the exterior inflation of that end into a strong solid basal angle, and the expansion of the inner basal outline. The angle formed by the meeting of the inner and under faces of the bulla is more acute, from the greater flattening of the former.

These differ as much from Balæna mysticetus angulata,* *Gray*. The long section of the opening is narrower, and the short portion shorter; the external basal angle opposite this portion, as well as the pocket, is not represented in Gray's figure. The former feature, with the greater prominence of the long external inflations at the other end, gives a very different inferior view, from the greater breadth, etc. The characteristic angle of Dr. Gray's figure is also wanting in the Salem species or variety.

Another bulla from Mus. Salem (No. 113) is narrower on the inferior view than even the cisarctica, and the outer lip of the opening is considerably higher. The inner inferior outline below the long process is very obliquely truncate, and the outer prominence near it is directed more outward. The inner or thick lip is not heavy, and is much plicate. The inner inferior compressed margin is much less flattened than the other Salem variety, (111—112.) Locality unknown.

### *October* 3*d*.

### Mr. Cassin, Vice-President, in the Chair.

Fifteen members present.

Dr. Leidy observed that the fine specimen of Cryolite, presented this evening by Edmund A. Souder, Esq., was from Ivigtut, Arksuk Fiord, Greenland, and was a sample from a ship load, one of a number of similar load imported to this place for the manufacture of soda alum.

Prof. Carson stated that he recently had an opportunity of ascertaining the plants from which the so-called American Tea is made. The variety called Green Tea is the product of the *Ceanothus Americanus*; the Black Tea, the product of the *Lysimachia quadrifolia*.

The death of Dr. Francis M. Moore, member of the Academy, was announced.

### *October* 10*th*.

### The President, Dr. Bridges, in the Chair.

Twenty-four members present.

Dr. Leidy made some remarks in relation to the specimens of oolitic phosphates of lime and alumina, from the Island of Navassa, W. I., presented this evening. The material, he stated, was imported in large quantities to this place, by Messrs. Potts and Klett, and was employed in the manufacture of a fertilizer. The mineral presents several varieties of color, but is especially remarkable for its constitution, resembling that of ordinary oolite. Dr. L. supposed that it was probably of organic origin, though the reverse opinion was held by persons of judgment.

Dr. Leidy further ealled the attention of the members to a collection of bones and stone implements, presented this evening by Mr. Frederick Klett. The remains were obtained from the Island of Orchilla, W. I., from a deposit of guano, eight inches below the surface. The bones are parts of three human

---

* Proc. Zool. Soc. 1864, 201.